IN THE SPECIFICATION:

Page 6, first complete paragraph, REPLACE as follows:

The transmitter 102 (to be described hereinafter in conjunction with Figure 2) generates a spreading waveform that is several orders of magnitude greater than the minimum required signal bandwidth enabling multiple users to simultaneously use the same bandwidth without significant interference with one another. The spreading waveform is controlled by a pseudo noise code 106, which is a sequence of bytes or chips with noise-like properties. The PN code modulates a carrier source where the bandwidth is a direct function of the chip rate. The PN coded carrier signal is further modulated by a data signal to provide an output signal 110, which is applied to the communication channel ~~106~~ 104 for purposes of measuring the reliability of the channel. The receiver ~~104~~ 108 generates a copy of the transmitter PN code 106, which is combined with a local version of the carrier signal for synchronization with output signal 110 in both code pattern positions; rate of chip generation and carrier fade to obtain an auto-correlation relative to the degree of correspondence between the transmitted signal and the received signal, which is a phase shifted version of the output signal 110. The autocorrelation value provides an indication of the signal to noise ratio of the channel. Based on the signal to noise ratio of the channel, feedback 112 can be supplied to the transmitter for adjustments to the chip rate, length of PN code and carrier frequency for improving the quality and reliability of the communication channel.

Page 7, second paragraph that continues to page 8, REPLACE, as follows:

In Fig. 3, the receiver 108 includes a correlator 300 which generates a local version of the carrier and the pseudo code PN. A variable frequency generator (f_0) 302 provides an input to a phase-shifter 304. Alternatively, a fixed frequency (f_1) 306 and a frequency divider 308 may be employed to provide an alternate input to the phase-shifter 304. The phase-shifter is under the control of a correlation phase controller 310, as will be described hereinafter. An analog-digital decoder 312 receives the phase shifted f_o or f_i and provides ~~an output to an analog digital decoder 312 which provides~~ an input to a PN generator 316 to duplicate the PN code 106 in terms of chips, byte length and byte rate. The output of the generator 316 is a duplicated PN code 317,

which is provided to a synchronizing circuit 318, which seeks to lock the local generated PN code 317 to the transmitted PN code 106 in terms of byte pattern and phase. To accomplish PN code locking, the generated PN code 317 is provided to a multiplexer 320, via a delay circuit 322, as a late representation of the generated PN code. The generated PN code 317 is also provided to a multiplexer 324 as an early representation of the generated PN code. ~~The~~ A channel signal [s (t)] 110 is quite different from that sent by the transmitter 102 at any instant. [~~A~~] The received channel signal 110['][1] is subject to a difference in carrier phase due to the channel propagation characteristics between the transmitter and the receiver. As a result, the receiver must synchronize its code sequence to the code sequence on the received signal received 110['][1].

Page 8, first complete paragraph and the second paragraph that continues to page 9, REPLACE as follows:

The output of multipliers 320 and 324 represent correlation values for the early and late generated signals with respect to the received phase-shifted input signals. The early and late correlation values are provided to a summing circuit 326 and a ~~different~~ difference circuit 328. The early correlation value, when subtracted from the late correlation value, provides an input to the correlation phase controller ~~312~~ 310, which adjust the phase-shifter to shift the output of the PN generator 316 until the output of the ~~different~~ difference circuit becomes zero and the summing circuit becomes the opposite value ~~for~~ or 1 representing synchronization or lock-up of the received signal and the generated signal. When the phase-shifter receives signal [s (t)] is multiplied by a code identical to that used in generating the received signal; the effect is complimentary to the code modulator and the transmitter. The input signal is inverted each time the local correlating code sequence has a 1-0 or a 0-1 transmission. If the transmitter code is identical to the local code and the two codes are time synchronous ~~and~~ then at each phase-shift of the transmitters signal, the receiver phase-shifts it again. These complimentary phase-shifts combine to compliment one another and to restore the original carrier.

When the received and generated signals are in synchronization, the input data input signal can be captured at terminal 330. A power detector 332 ~~322~~ determines the signal level for measuring the signal level of the output signal and compares the measured signal level to a

threshold value based upon experience of reliable transmission of data through the channel. If the correlation value is above the threshold, reliable transmission is occurring through the channel. If the correction value is below the threshold, an indication is given of unreliable transmission though the channel. The power level of the date may be increased to ~~compensation of continuation~~ compensate for attenuation on the channel.

Page 9, first complete paragraph, REPLACE, as follows:

Alternatively, the length of the PN code may be adjusted to compensate for the ~~continuation in~~ attenuation on the channel. However, as the PN code length increases, the correlation value becomes less susceptible to noise in the transmission medium due to the auto-correlation properties of the pseudo noise code. If the threshold value is not exceeded when the largest practice PN code is used, the environment is too noisy for reliable data transmission.

Page 10, second complete paragraph, REPLACE, as follows:

Fig. 4 discloses an alternative process 400 for synchronizing the received PN code with the generated code at the receiver 108. In step 401, a counter is initiated at zero for counting each bit in the receiver generated PN code. The counter is incremented for each bit in the generated PN code in step 403 and a correlation value is calculated and compared to a threshold value indicative of reliable transmission through the channel. In step 405, the number of bits (N) in the code is increased until the number of bits is greater than 2^{N+1}-1, which provides the Peak correlation value (P) for the received signal. After the phase shifted received carrier is phase locked to the receiver-generated version of the carrier[~~.~~] ~~T~~the process continues for carrier phase locking by setting a phase difference counter in step 407 for the carrier (f_c). The counter is incremented in step 409 until the maximum number carrier phases is reached in step 411 whereupon the process returns to step 403 for continued increase of the PN code bits until the Peak correlation value is reached in step 406 after which the Peak correlation value calculation process ends in step 406. A no condition at step 411 initiates an operation 413, which compares the current phase of the received signal (PD) to the current phase of the peak value of the generated code ($PD_{j)}$. In step 415, a comparison is done between the peak correlation value P and the correlated value for a late comparison of the received and the generated PN codes. If the peak value (P) is greater than the late correlation value, a comparison is made in step 417 to

determine if the peak correlation value is greater than the early correlation value between the received and generated PN codes. A yes condition sets a flag in step 419 indicative of carrier

Page 11, second complete paragraph, REPLACE, as follows:

Fig. 5 describes a process 500 for determining the goodness of a channel based upon the correlation values determined in Fig. 4. Before calculating the channel goodness, a center frequency counter (i) is set to zero in step 501 for a range of N frequencies to determine the carrier frequency at which the channel goodness will be calculated. The counter 501 is stepped down from the maximum frequency until the center frequency is zero. In step 503, a selected center frequency (fc) is set to (fi) and the counter (i) is incremented by 1. In step 505, the channel frequency is compared to the maximum center frequency. If the maximum center frequency has been reached, the process is stopped in operation 507. If step 505 is NO, a phase counter (j) is set to 0 for center frequency ~~(f0)~~ (f_{oj}) in operation 509. In an operation 511, the synchronization process 400 described in Fig. 4 is performed on the selected center frequency (foj). In step 513, when the Peak correlation value ~~m' (t~~) for the selected center frequency is greater than the threshold value (V_{th}), the channel goodness quality is calculated in operation 515 as the difference between the present peak correlation value less the peak correlation value for the previous calculated peak value, after which the process calculates the goodness for the next frequency.